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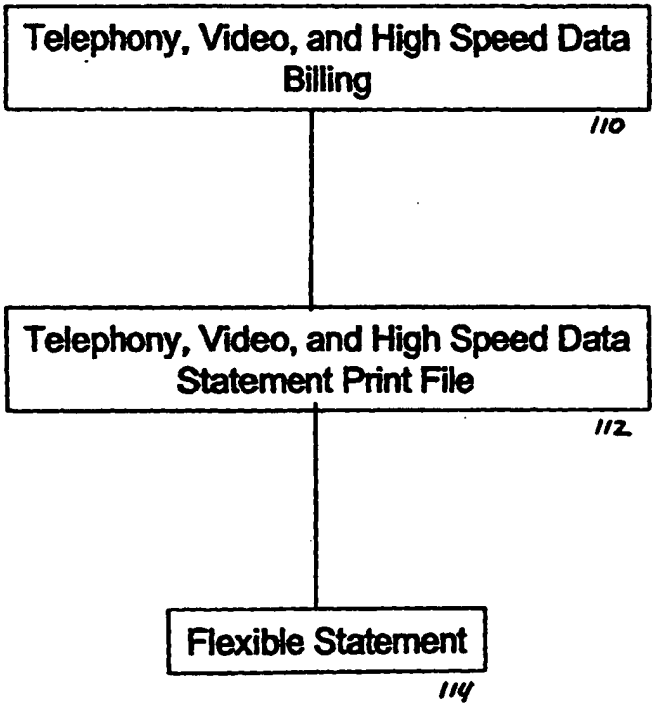

(57) Abstract: The present invention is a system and method for producing statements that have charges for one or more service categories. The present invention enables a service provider to define which services appear on what statements for any given customer. Using the present invention, it is possible to include telephony, cable, video, and/or data services (110) on the same statement, separate statements, or any combination of services on one or more statements (114). In addition, the layout and presentation of information on a statement may differ based on the types of services that appear on a statement (114). Statements are produced in accordance with defined codes having one or more attributes that reflect the configuration and presentation of information for a statement.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

SYSTEM AND METHOD FOR PRODUCING FLEXIBLE STATEMENTS

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to production of billing statements. Particularly, the present invention relates to the production of billing statements for combinations of services such as telephone, cable, and high speed data and the production of a single or multiple billing statements for telephone, cable, and data services depending on a customer's preferences.

Description of Related Art

Service providers such as local telephone service providers, long distance telephone service providers, and cable television service providers typically produce and send their customers monthly billing statements that reflect usage charges such as telephone calls, pay per view requests, etc. that occurred during the month and recurring charges such as a monthly telephone fee and a monthly cable fee. Services are typically considered distinct and separate. Separate statements are produced and sent for each service because each service is subject to different messages, notices, inserts, taxes, collection procedures, etc. Different presentation options may be applied to the different types of services, but there is no way to integrate the services for presentation on one or more statements and no way to apply the different presentation options across services. Furthermore, there are often physical limitations with respect to the printed bill such that all of the information the service provider would like to print on the bill cannot be

accommodated. Current statement production systems impose further limitations by providing few formatting and layout options to service providers. Service providers today need flexibility in defining the format and layout options for billing statements and further need the ability to generate one or more billing statements for accounts having any combination of telephone, cable, and/or data services.

Some billing systems today allow service providers to include telephone and cable/data services on a single statement. However, the single statement is produced from two separate files that are merged or "electronically stapled" at the time the statement is printed or displayed. One file contains the telephone service information and the other file contains the cable/data service information. Such systems may allow complete blocks of data (e.g., telephone service data or cable service data) to be rearranged. However, the systems do not support the rearrangement or reordering of information appearing within a block of data. Furthermore, the systems do not support integration of services within a block so that, for example, recurring monthly charges for telephone and cable are shown on one part of a statement, telephone usage is shown on another part of the statement, and pay per view usage is shown on still another part of the statement. Currently, there is little flexibility in arranging the data appearing on the statement and no way to combine or separate services on a billing statement according to customer preferences.

SUMMARY OF THE INVENTION

The present invention is a system and method for producing (e.g., printing or displaying) flexible statements. Flexibility is supported through statement configuration and statement presentation definitions in which a service provider decides what information should appear on a statement and how the selected information should appear on a statement.

Statements in accordance with the present invention may have usage charges and recurring charges for one or more service categories. The present invention enables a service provider to define which service categories appear on what statements for any given customer. A customer's statement may include charges for services that are actually provided to a different customer. For example, charges for premium cable television services provided to one customer may be billed to another customer. In addition to flexibility in choosing service categories for a statement, the present invention supports presentation of the information in a variety of ways. The present invention uses statement codes, statement attribute codes, and statement presentation codes to determine the general layout of a statement and to determine what transactions are grouped and how they are grouped and produced (printed or displayed) on a statement. Additional codes may be used to further support the statement configuration and statement presentation features of the present invention.

The statement presentation features of the present invention provide support for collating, grouping, summarizing, and describing of transactions (e.g., usage and recurring transactions) for the service categories that appear on a statement. The

present invention allows a service provider to group, summarize, and order like statement transactions for a particular telephony or cable service category (e.g., telephone service, cable service, data service, calling cards, video service, and special circuits). Like transactions may be grouped in one service category or mixed across different service categories. Statement transactions are defined generally to be different charges for various activities or tasks such as payments and adjustments, recurring service charges, one time charges for installations, deposits, etc., usage of telephony, cable, or data services, taxes, etc. for one or more occurrences. An occurrence represents a grouping of services on an account. Each occurrence has a number, letter, or identifier associated with it. An occurrence may be a telephone line with an associated telephone number, an equipment outlet with an associated equipment outlet number, a special circuit with an associated circuit number, a calling card with an associated calling card number, a high speed data outlet with an associated number, a grouping of services such as premium cable services, etc.

The statement configuration features of the present invention support combinations of service categories on a single or multiple statements. The system and method of the present invention also enable the service provider to change an existing statement configuration by combining separate statements or splitting apart one statement. The present invention further allows a service provider to display a customer's current statement configuration. The service provider may further view a list of occurrences, including their associated transactions (recurring and usage) and bill day. The present invention further guides all usage to an occurrence to derive

the associated statement. Telephony usage may be guided by telephone number and PPV/VOD usage may be guided by an equipment outlet number.

In an example embodiment of the present invention, each statement contains all transactions (e.g., payments and adjustments, recurring services charges, one time charges for installations, deposits, etc., usage of telephony, cable, or data services, taxes, etc.) for one or more occurrences. The present invention provides the ability to define the associated statement for each occurrence on customer's account. The use of occurrences to define related services allow each telephony, cable, and data customer to be processed on separate statements, or to be consolidated in any combination of one or more statements.

The present invention further provides the ability to define and produce (e.g., print or display) an associated statement for usage transactions for each occurrence line on an account. All usage transactions (e.g., telephony usages, pay per view (PPV) usages, video on demand (VOD) usages) for an occurrence may be processed with and appear on the associated statement. As a result, usage transactions may be on a separate statement from recurring transactions. This feature of the present invention allows segregation of PPV or VOD transactions from a traditional cable service statement.

The present invention subdivides statement transactions into several layers for presentation on a statement. At the highest layer are four segments: summary, itemization, usage detail, and tax. These segments are subdivided into user-defined sections, which are groups of a lower presentation layer. These lower presentation layers vary by the segment type. The presentation layer for the summary segment is

the summary line. The presentation layer for the itemization and usage detail segments consists of statement occurrence lines, which are subdivided by statement presentation codes. Each statement presentation code has a group of attributes that defines how information related to the code may be printed or viewed. In an example embodiment of the present invention, the statement presentation code attributes include a section code that determines where on the statement to print the statement presentation code, a summary line to which transaction amounts are added, and an indicator to determine whether the statement presentation code should be sorted within an occurrence.

Because of the flexibility in producing statements, a service provider may offer its customers the option of deciding which services are billed on a particular statement. Customers may choose to have all services billed on one statement or they may choose to have some services billed on one statement and other services billed on a different statement. A customer may also choose to have another customer's services billed on his or her statement. The present invention provides a service provider with flexibility in deciding what information should appear in a statement and in deciding how the selected information should appear on a statement. For example, a customer of the service provider may elect to have charges for three telephone lines, cable service, and cellular phone service appear on a single statement. The service provider who produces the statement for the customer may configure the statement so that a "monthly charges" portion of the statement shows the monthly charges applicable to the three telephone lines, cable service, and cellular phone service. However, the usage for each telephone line,

cable service, and cellular phone service may be grouped and shown in separate portions of the statement. The present invention supports configuration and presentation so that the preferences of the customer may be accommodated.

BRIEF DESCRIPTION OF THE DRAWING(S)

Fig. 1 is a block diagram of the primary components for a prior art billing system;

Fig. 2 is a block diagram of the primary components for a flexible billing system in accordance with the present invention;

Fig. 3 is a block diagram of statement configuration in accordance with an example embodiment of the present invention;

Fig. 4 is a block diagram of statement presentation in accordance with an example embodiment of the present invention;

Fig. 5 is a flowchart of the primary steps for producing a flexible statement in accordance with the present invention; and

Figs. 6A-6D represent a sample flexible statement produced in accordance with the present invention.

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENT(S)

The present invention comprises a plurality of computers and software components that provide the features and functionality as described herein. Referring to Fig. 1, a block diagram of a prior art billing system is shown. As shown in Fig. 1, telephony and cable (or video/high speed data) services are typically considered distinct and separate. Separate billing systems for the services are

designed, developed, and maintained. Each billing system may produce a statement print file that is then used to generate a statement for each customer for the service provider. For example, a telephony billing system 100 may be responsible for all services related to telephony services such as telephone usage, call plans, etc. The output of a telephony billing process 100 is typically a telephony statement print file 102 that contains the information related to each customer's account that is needed to produce a printed statement. A separate and independent billing system may be used for video and high speed data services 104 such as PPV, Internet access, etc. The output of a video and high speed data billing process 104 is a video and high speed data statement print file 106 that contains customer account information for printing a statement. The information from the independent statement print files 102, 106 may be merged to create an "electronically stapled" statement 108. Although the electronically stapled statement 108 may show charges related to each separate service, there is no way to group similar charges (e.g., monthly recurring charges) for all services. The billing systems are unrelated and produce separate statement print files 102, 106. There is no integrated process or system for defining the relationships between services, arranging the data that appears on the statement, and producing statements that conform to customer preferences.

Referring to Fig. 2, an integrated telephony, video, and high speed data billing system in accordance with the present invention is shown. The telephony, video, and high speed data billing process 110 of the present invention produces one statement print file 112 that contains customer account information for telephony, video, and high speed data services. The resulting flexible statements 114

therefore, may conform to each customer's preferences. The integrated process and system of the present invention supports the definition of relationships between services, arrangement of the data that appears on the statement, and the production of statements that conform to customer preferences.

Statement configuration in accordance with the present invention allows relationships to be defined between services and customers. Referring to Fig. 3, a block diagram of statement configuration in accordance with the present invention is shown. As shown in Fig. 3, one or more occurrences may be associated with an account. For example, account 1 120 may have two occurrences 124, 132 and account 2 122 may have two occurrences 140, 148. An occurrence 124, 132, 140, 148 represents a grouping of services on an account. Each occurrence has a number, letter, or identifier associated with it. An occurrence may be a telephone line with an associated telephone number, an equipment outlet with an associated equipment outlet number, a special circuit with an associated circuit number, a calling card with an associated calling card number, a high speed data outlet with an associated number, a grouping of services such as premium cable services, etc.

For example, for account 1 120, the first occurrence 124 may relate to a first telephone line at a customer's home that the customer uses primarily for voice communications. The second occurrence 132 for account 1 120 may relate to a second telephone line at a customer's home that the customer uses primarily for data communications such as to connect his or her home computer via a modem to an Internet Service Provider. For account 2 122, the first occurrence 140 may relate

to the customer's telephone line and the second occurrence 148 may relate to the customer's cable service.

The customers have the option of receiving one or more statements that reflects charges for the occurrences. As shown in Fig. 3, the customer of account 1 120 receives two statements 130, 138. The customer of account 2 122 receives one statement 160.

As shown in Fig. 3, each occurrence 124, 132, 140, 148 is further comprised of one or more usage transactions or recurring transactions. For example, occurrence 1-1 124 is associated with recurring transactions 126 and usage transactions 128. Occurrence 1-2 132 is associated with recurring transactions 134 and usage transactions 136. Occurrence 2-1 140 is associated with recurring transactions 142 and usage transactions 146. Finally, occurrence 2-2 148 is associated with recurring transactions 150 and usage transactions 156. Although each occurrence shown in Fig. 3 has recurring transactions and usage transactions associated with it, an occurrence may have only usage transactions or only recurring transactions associated with it.

The usage transactions 128, 136, 146, 156 relate to a customer's usage of a service such as telephone calls on a telephone line for telephone service or pay per view requests on an equipment outlet for cable service. The recurring transactions 126, 134, 142, 150 relate to monthly, weekly, etc. charges that are not usage transactions and that may apply to a particular service.

Transactions such as usage transactions and recurring transactions may be associated with an occurrence in order to produce a statement for a customer. Any

number of occurrences may be associated with a statement. As shown in Fig. 3, occurrence 1-1 124 is associated with statement 1-1 130. Therefore, statement 1-1 130 reflects the recurring transactions 126 and usage transactions 128 for occurrence 1-1 124. Occurrence 1-2 132 is associated with statement 1-2 138. Occurrence 2-1 140 is also associated with statement 1-2 138. As shown in Fig. 3, occurrences from one customer's account may be associated with a statement for a different customer's account. For example, if occurrence 2-1 is telephone line for the customer of account 2 122, usage transactions 146 for occurrence 2-1 140 may be billed to the customer of account 1 120 by directing the charges to statement 1-2 138, which is a statement for account 1 120. The recurring transactions 142 for occurrence 2-1 140 are associated with statement 2-1 160. Therefore, statement 1-2 138 reflects recurring transactions and usage transactions for occurrence 1-2 132 and usage transactions for occurrence 2-1 140. Finally, occurrence 2-2 148 is associated with statement 2-1 160. Statement 2-1 160 for account 2 122 therefore reflects recurring transactions for occurrence 2-1 and recurring transactions and usage transactions for occurrence 2-2 148.

Referring to Fig. 4, statement presentation in accordance with present invention is shown. Referring to Fig. 4, the conceptual layout of a billing statement in accordance with an example embodiment of the present invention is shown. In accordance with the present invention, statements are divided into four segments: Summary 170, Itemization 176, Usage Detail 184, and Taxes 192. Each segments may be further subdivided into sections 172 178, 186 194. Each segment may have

a plurality of sections. The sections vary by a segment type and are comprised of additional components.

Fig. 4 shows the relationships between the various portions of the statement segments. The summary segment 170 may comprise sections 172 and summary lines 174. The itemization segment 176 may comprise sections 178, occurrences 180, and presentation codes 182 that relate to the segment, sections, or occurrences. The usage detail segment 184 may comprise sections 186, occurrences 188, and presentation codes 190. The presentation codes may relate to the segment, sections, or occurrences. Finally, the taxes segment may comprise sections 194, presentation codes 196 and tax statement lines 198. The presentation codes may relate to the tax segment 192 or sections 194.

The statement presentation codes 182, 190, 198 associated with service offerings dictate how transactions (e.g., usage and recurring transactions) are grouped and presented in each segment on the statement. Service offerings relate to the types of transactions that may be associated with one or more service categories such as a one-time installation charge and a recurring monthly charge as well as PPV event charges for cable service. Each statement presentation code has a plurality of attributes associated with it. The attributes of statement presentation codes may include, among other things:

a statement section code in which to print the statement presentation code;

a statement summary line to add the amount of the transactions to;

an indication if the statement presentation code should be sorted within the occurrence;

a header (text appearing on statement);

a subtotal (total appearing on statement);

a footer (text appearing on statement;

one or more offsets indicating where information appears on statement;

number of lines to skip before or after the statement presentation code; and

a font code.

Statement section codes provide a means to group together statement presentation codes. The statement section codes allow transactions to be grouped by category of service, or combinations of categories. Certain transactions, such as payments, that are not specific to a category of service may be grouped into one or more statement section codes as well. Use and set up of statement section codes and statement presentation codes allow a service provider to:

group all transactions by category;

group some transactions by category and others in sections of blended or no categories; and

group "cross category" service packages in one section, while grouping category specific transactions in their own sections.

As a reference for print systems that print billing statements, statement font codes may be set up and assigned to statement section codes and statement occurrence lines so the print system knows what font attributes to apply to those areas of the statement. For example, section code 101 may be used for defining how telephone services print on a statement. To print with bold and italics font attributes, the font code BI may be assigned to bold and italics in the font code

description. After supplying the print system with a cross-referenced list of the font codes and their definitions, whenever the print system encounters the BI font code, the bold and italic font attributes are applied to that section.

Referring to Fig. 5, the primary steps for producing a flexible statement in accordance with the present invention is shown. Many of the steps involve establishing or defining codes. Codes in accordance with the present invention may be any combination of numbers and/or letters (i.e., alphanumeric characters) that identify an attribute or set of attributes for an item appearing on a statement.

Service Category Code

The first step in producing a flexible statement in accordance with the present invention is to define service category codes 300. Service category codes identify a particular type of telephony or cable service that may be offered by a service provider. Telephony services may include standard telephone service, calling card services, cellular telephone service, special circuits service, etc. Cable services may include cable television service, high speed data services, etc. Any type of code may be assigned to a service category. For example, service category codes may be defined as follows.

Table 1

Service Category	Service Category Code
Cable	C
High Speed Data	D
Calling Cards	L
Special Circuits	S
Telephone	T

Statement Occurrence Line

In the next step, statement occurrence lines are defined 302. The statement occurrence line indicates how the occurrences appear on the statement. As explained previously, an occurrence represents a grouping of services on an account such as a telephone line, an equipment outlet, a special circuit, a calling card, a high speed data outlet, premium cable services, etc. A statement in accordance with the present invention may include two or more occurrences that have services that refer to the same statement presentation codes (e.g., recurring charges).

A statement occurrence line may have a number of statement presentation codes associated with it. For example, the user may associate with a statement occurrence line, through a statement presentation code, a header, subtotal, and footer that prints in the itemization segment of the statement. A header, subtotal, and footer may also be specified for the usage detail segment of the statement. In addition, a font code may be assigned.

Service Offerings

In the next step, service offerings are defined for the various service category codes defined previously 304. Service offerings relate to the types of transactions that may be associated with one or more service category. For example, transactions for cable service may include a one-time installation charge and a recurring monthly charge. Transactions for cable service may further include usage transactions such as PPV event charges. A customer's statement may reflect all of these transactions or charges that apply to the cable service. In defining service offerings, a code may be associated with each type of service offering. For example, service offerings and associated codes may be defined as follows.

Table 2

Service Offering	Service Offering Code
Installment	100
Adjustment	101
PPV Event	102
Usage	103
Method of Payment	104
Recurring	105
Payment	106

Several attributes may be associated with each service offering code. For example, certain rates and packaging options may be associated with a particular service offering code.

Statement Presentation Codes

In the next step, the user defines statement presentation codes 306. As noted above, statement presentation codes dictate how transactions are grouped and presented on a statement. A statement presentation code may have attributes such as a statement section code, a statement summary line, an indication if the statement presentation code should be sorted within the statement occurrence line, a header, a subtotal, a footer, one or more offsets, skip lines, and a font code.

In the next step, service offering codes and statement presentation codes are associated 308. For example, service offering codes and statement presentation codes may be associated as follows.

Table 3

Service Offering Code	Statement Presentation Code
100 (Installment)	AA

101 (Adjustment)	BB
102 (PPV Event)	CC
103 (Usage)	DD
104 (Method of Payment)	FF
105 (Recurring)	CC
106 (Payment)	BB

Tax Codes

Tax Codes may be defined in the next step 310. Cable and telephony services are subject to varying federal and state taxes. When producing a statement for a customer, taxes are applied based on the types of services appearing on the statement. For example, FET (Federal Excise Tax), Telecommunications/Occupation, Franchise, TAP (Telephone Assistance Plan)/Lifeline, TDD (Telecommunications Device for the Deaf)/TRS (Telephone Relay Services)/DPR (Dual Party Relay) taxes may be applied to telephone services.

Determining the taxes to be applied to various services may be accomplished in accordance with tax codes. Each tax code may represent a particular type of tax. The tax code may further specify rules for calculating and applying the tax to a particular service or dollar amount. Examples of taxes that may be applied to services include gross receipts taxes, maximum taxes, flat rate taxes, and sliding taxes.

A gross receipts tax may be passed through to the customer. A tax code for a gross receipts tax may indicate that the amount of the gross receipts tax is added to a base amount upon which a sales tax is then assessed. For a maximum tax, the tax code may be defined to indicate that a cap on the amount of tax may be applied to either a transaction or total invoice amount. For example, a tax rate of 10% may

be calculated on a taxable base and the maximum tax amount that may be applied is $10 even though the calculated amount is more than $10. For flat rate taxes, a tax code may indicate that a flat rate tax based on the number of telephone lines, etc. applies. There may also be a cap on the flat rate tax. For example, in some cases, a 911 fee may be 20 cents per number of telephone lines. Additionally, a cap on the flat rate tax may be a 100-line cap per account. For sliding tax rates/fees, a tax code may indicate that the rate charged for a particular tax type varies based on the number of telephone lines billed on a statement. For example, in a given jurisdiction, a particular tax rate may apply to the first three telephone lines on an account, while another tax rate may apply to the next three telephone lines, and so on.

Using tax codes, each service offered and billed to a customer may be evaluated for tax application. For example, different services may be taxed differently based on the taxing rules within a particular jurisdiction. Also supported is the ability to tax individual services at specific jurisdiction levels. For example, a product/service may be subject to a city sales tax but not subject to the state sales tax.

After tax codes are defined, in the next step, tax codes are associated with statement presentation codes 222.

Table 4

Tax Code	Statement Presentation Code
1001 (Gross Receipts)	EE
1002 (Maximum Tax)	GG
1003 (Flat Tax)	HH
1004 (Sliding Tax)	EE

In the next step, tax codes are associated with service offering codes 314.

Table 5

Tax Code	Service Offering Code
1001 (Gross Receipts)	102 (PPV Event)
1002 (Maximum Tax)	100 (Installment)
1003 (Flat Tax)	103 (Usage)
1004 (Sliding Tax)	106 (Recurring)

Statement Attribute Code

In the next step, statement attribute codes are defined 316. A statement attribute code defines the various properties of a customer's statement such as bill messages, the way taxes appear on a statement, and what service categories are grouped together. For example, each statement produced in accordance with the present invention may have a statement attribute code that defines generally how information appears on a statement. A number of attributes may be associated with each statement attribute code. For example, for each statement attribute code, a user may define a description, a threshold number of lines, filtering criteria for generating statements, description and message text for various statement items, and statement message criteria.

In the next step, a statement attribute code may be assigned to a service category and/or a combination of service categories 318. The combination of service categories on a statement dictate what statement attribute that statement has.

Table 6

Statement Attribute Code	Combination of Service Category Codes

A	C
A	CD
B	T
C	CT
D	CDL
E	S

In the next step 320, service offerings are assigned to occurrences on customer accounts. For example, a customer account with two occurrences (e.g., one for telephone service and one for cable service) may have service offerings assigned as follows.

Table 7

Service Offering	Occurrence
110 (Recurring Telephone)	1-1
111 (Usage Telephone)	1-1
112 (Recurring Cable)	1-2
106 (PPV Event)	1-2

Statement Codes

Statement codes are defined for customer accounts in the next step 322. A statement code indicates the type of service for which a statement is sent to a customer (e.g., cable, data, telephone, or combination of services). A statement code may be associated with each statement that a service provider's customer would like to receive. The assignment of occurrences to a statement code defines whether multiple statements or just a single, converged statement is printed for a customer depending on the customer's preference. Statement codes may be established for each customer as a sequential number. In order to produce a

statement for a customer, in the next step 324, each applicable occurrence is associated with a statement code.

Occurrences that are assigned the same statement code are printed on the same statement. A customer may have occurrences that are printed to one statement or printed to two or more statements. To merge services on a statement, the occurrences are moved from one statement code to another. To split services from a statement, a new statement code is created and occurrences are moved from an existing statement code to the new statement code. For example, a service provider may have its service categories set so all categories print on one statement. However, a customer of the service provider may decide he or she wants cable and telephone services on separate statements. Using customer statement configuration options, it is possible to add a statement to the customer's account and move either the cable or telephone service category to the new statement, therefore, creating a second statement that the customer will receive—one for cable and one for telephone. Another option is to merge one customer's statement with another customer's statement. For example, one customer's cable statement may be merged with another customer's cable statement.

Statement Production

Flexible statements in accordance with the present invention are produced in accordance with statement codes, statement attribute codes, and statement presentation codes 326. Processing of statements may be accomplished by first examining statement codes to determine which occurrence lines are associated with a particular statement code. The occurrence lines for a particular statement code

indicate which service offerings belong to a particular occurrence line. Once the service offerings are known, the statement attribute codes associated with the combination of service category codes for the known service offerings and the statement presentation codes for the service offerings and occurrence lines may be evaluated to determine where and how information appears on a statement.

The use of statement presentation codes supports sorting and processing of transactions in different ways so statements with varying content and formats may be produced. For example, a statement may include two or more occurrence lines (e.g., telephone lines) with service offerings that refer to the same statement presentation code. The transactions may refer to each telephone line separately. The transactions may be sorted and processed by occurrence line (e.g., telephone line) prior to sorting by statement presentation code. Alternatively, transactions for all telephone lines may be combined. In this case, transactions may be sorted by statement presentation code without regard to the occurrence.

Referring to Figs. 6A-6D, an example of a flexible statement produced in accordance with the present invention is shown. The statement of Figs. 6A-6D reflects the layout of a flexible statement in accordance with the present invention. As shown in Figs. 6A-6D, a statement may be divided into one or more segments 1. Segments may include a summary segment, itemization segment, usage detail segment, and taxes. Each segment may be comprised of one or more areas in which specific information is presented. Referring to Figs. 6A-6D, the following statement areas are defined in accordance with the codes of the present invention. Summary line 2, section header 3, section subtotal, presentation header 5,

presentation subtotal 6, itemization segment occurrence header 7, itemization transaction 8, 9, itemization segment occurrence subtotal 10, usage detail segment occurrence header 11, usage transaction 12, usage detail segment occurrence subtotal 13, previous month's balance, tax line 15, print vendor 16, and bill message 17. The appearance of the statement depends upon the values of the various attributes for the each of the codes that may be defined in accordance with the present invention. Changing the definitions of the various codes allows a service provider to define and produce different types of statements based on a customer's preference. Using the present invention, service providers may control where and how information appears on a statement.

The present invention facilitates the production of billing statements for telephone, cable, and data services by supporting the collating, grouping, summarizing, and describing of transactions for a statement. The present invention provides a conceptual layout of a statement that provides a service provider with flexibility in producing statements for its customers. A service provider may group, summarize, and order like statement transactions for a particular service category (e.g., telephone service, cable service, and data service) so that a customer has the option of receiving one or more statements, based on his or her preference, for each service used. Although the present invention has been described in accordance with an example embodiment, it is understood that many modifications to the present invention may be made without departing from the scope of the present invention.

What is claimed is:

1. A system for producing flexible statements, comprising:

transactions for a telephony service category;

transactions for a cable service category;

codes associated with the transactions for the telephony service category and the transactions for the cable service category; and

a computer adapted to produce in accordance with the codes a statement with the transactions for the telephony service category and the transactions for the cable service category.

2. The system of claim 1 wherein the transactions comprise usage transactions.

3. The system of claim 1 wherein the transactions comprise recurring transactions.

4. The system of claim 1 wherein the telephony service category comprises a service selected from the group consisting of standard telephone service, calling card service, cellular telephone service, and special circuits service.

5. The system of claim 1 wherein the cable service category comprises a service selected from the group consisting of cable television service and high speed data service.

6. The system of claim 1 wherein the codes comprise statement codes, statement attribute codes, and statement presentation codes.

7. The system of claim 6 wherein the statement presentation codes comprise attributes selected from the group consisting of a statement section code, a statement summary line, a header, a subtotal, a footer, one or more offsets, a

number of lines to skip, and a font code.

8. The system of claim 1 wherein the statement comprises a summary segment, an itemization segment, and a usage detail segment.

9. A method for producing flexible statements, comprising the steps of:

associating transactions with a telephony service category;

associating transactions with a cable service category;

associating codes with the transactions for the telephony service category and the transactions for the cable service category; and

producing a statement in accordance with the codes, the statement comprising the transactions for the telephony service category and the transactions for the cable service category.

10. The method of claim 9 wherein the steps of associating transactions with a telephony service category and associating transactions with a cable service category comprise the steps of associating usage transactions with the telephony and cable service categories and associating recurring transactions with the telephony and cable service categories.

11. The method of claim 9 wherein the telephony service category comprises a service selected from the group consisting of standard telephone service, calling card service, cellular telephone service, and special circuits service.

12. The system of claim 9 wherein the cable service category comprises a service selected from the group consisting of cable television service and high speed data service.

13. The method of claim 9 wherein the step of associating codes with the transactions comprises the step of associating statement codes, statement attribute codes, and statement presentation codes with the transactions.

14. The method of claim 13 wherein the statement presentation codes comprise attributes selected from the group consisting of a statement section code, a statement summary line, a header, a subtotal, a footer, one or more offsets, a number of lines to skip, and a font code.

15. The method of claim 9 wherein the step of producing a statement comprises the step of displaying a statement.

16. The method of claim 9 wherein the step of producing a statement comprises the step of printing a statement.

17. A method for producing flexible statements comprising the steps of:

defining service category codes;

defining statement occurrence lines;

defining service offering codes for each of the service category codes;

associating the service offering codes with statement presentation codes;

defining statement attribute codes;

associating the statement attribute codes with the service category codes;

assigning the service offerings to occurrences;

assigning the occurrences to statement codes;

associating transactions with the occurrences; and

and producing a statement in accordance with the service category codes,

statement occurrence lines, service offering codes, statement attribute codes, occurrences, statement codes, and transactions.

18. The method of claim 16 wherein the step of associating transactions with the occurrences comprises the steps of associating recurring transactions with the occurrences and associating usage transactions with the occurrences.

19. The method of claim 17 wherein the statement presentation codes comprise attributes selected from the group consisting of a statement section code, a statement summary line, a header, a subtotal, a footer, one or more offsets, a number of lines to skip, and a font code.

20. The method of claim 17 wherein the statement attribute code comprises attributes selected from the group consisting of a description, a threshold number of lines, and preferences as to whether a summary, taxes, itemizations, usage detail, billing message or statement text are included in a threshold count.

21. The method of claim 17 wherein the occurrences are selected from the group consisting of telephone lines, equipment outlets, special circuits, calling cards, and high speed data outlets.

22. A method for producing flexible statements, comprising the steps of:

associating a plurality of first transactions with a first customer account;

associating a plurality of second transactions with a second customer account;

producing a statement for the first customer account, the statement comprising the plurality of first transactions and the plurality of second

transactions.

23. The method of claim 22 wherein the plurality of second transactions are recurring transactions.

24. The method of claim 22 wherein the plurality of second transactions are usage transactions.

25. The method of claim 22 wherein the plurality of second transactions are for telephony services.

26. The method of claim 22 wherein the plurality of second transactions are for cable services.

27. A method for producing flexible statements, comprising the steps of:

establishing a customer account;

associating a plurality of cable television service transactions with a first statement code for the customer account;

associating a plurality of high speed data service transactions with a second statement code for the customer account;

producing a first statement for the customer account in accordance with the first statement code; and

producing a second statement for the customer account in accordance with the second statement code.

28. The method of claim 27 wherein the step of associating a plurality of cable television service transactions with a first statement code comprises the steps of assigning occurrences to the first statement code and assigning transactions to

the occurrences.

29. The method of claim 27 wherein the step of associating a plurality of high speed data service transactions with a second statement code comprises the steps of assigning occurrences to the second statement code and assigning transactions to the occurrences.

30. The method of claim 27 wherein the cable television service transactions and high speed data service transactions comprise recurring transactions and usage transactions.

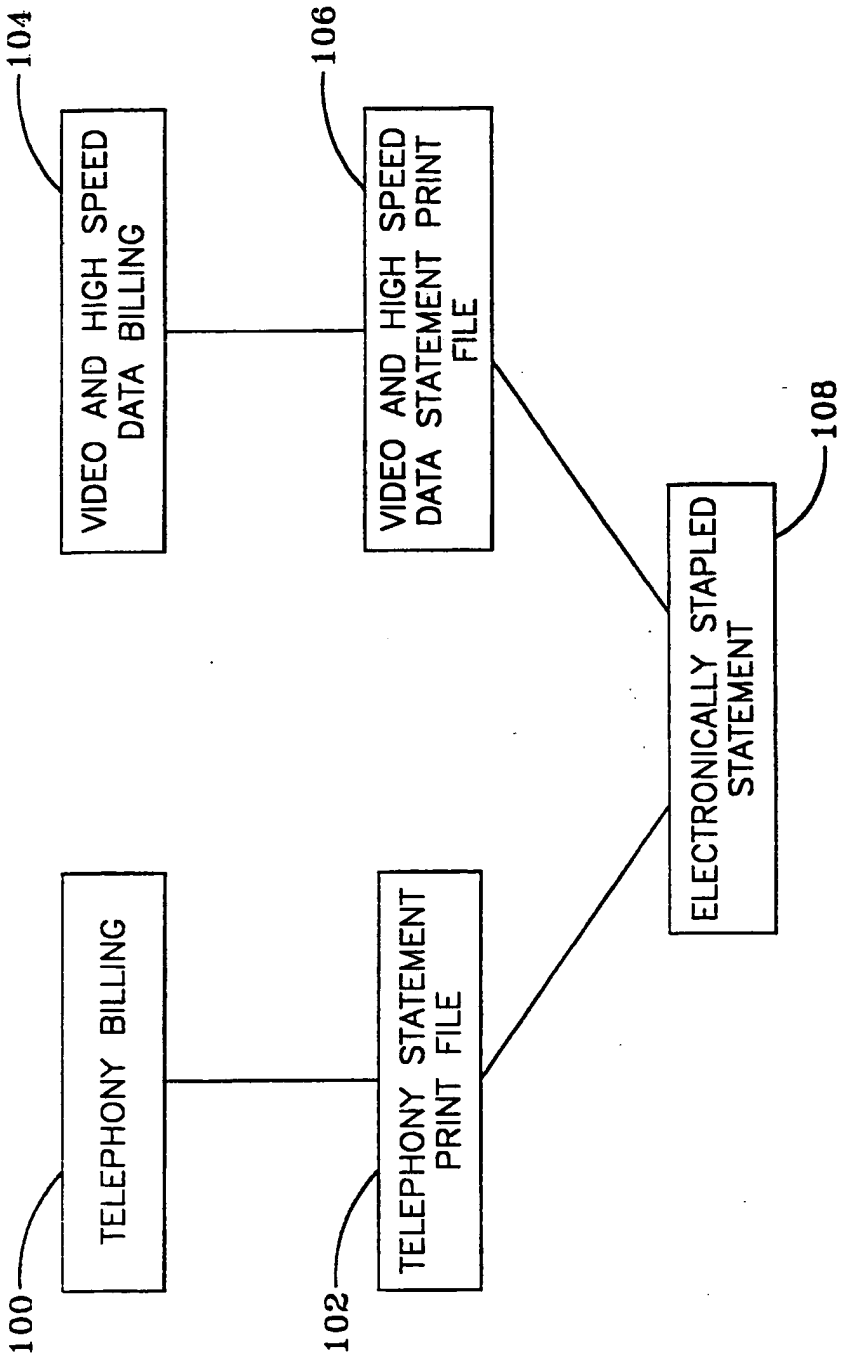

FIG-1
PRIOR ART

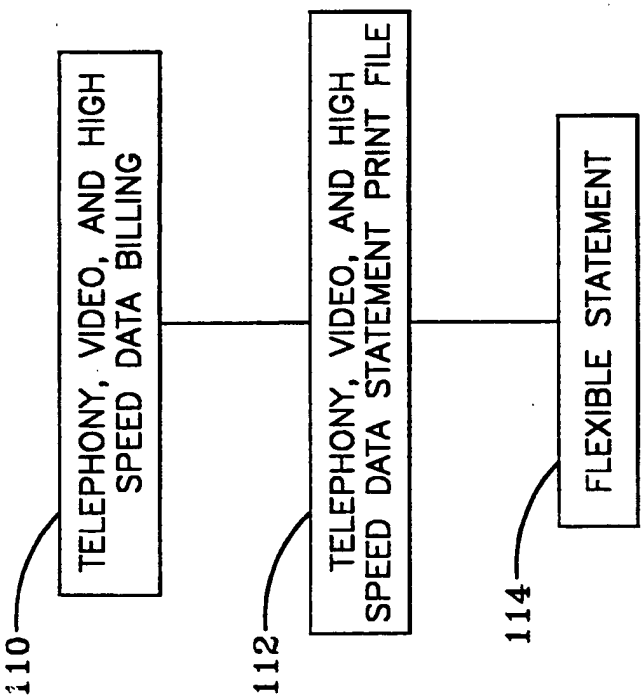
TELEPHONY, VIDEO, AND HIGH SPEED DATA BILLING
TELEPHONY, VIDEO, AND HIGH SPEED DATA STATEMENT PRINT FILE
FLEXIBLE STATEMENT
110
112
114

FIG-2

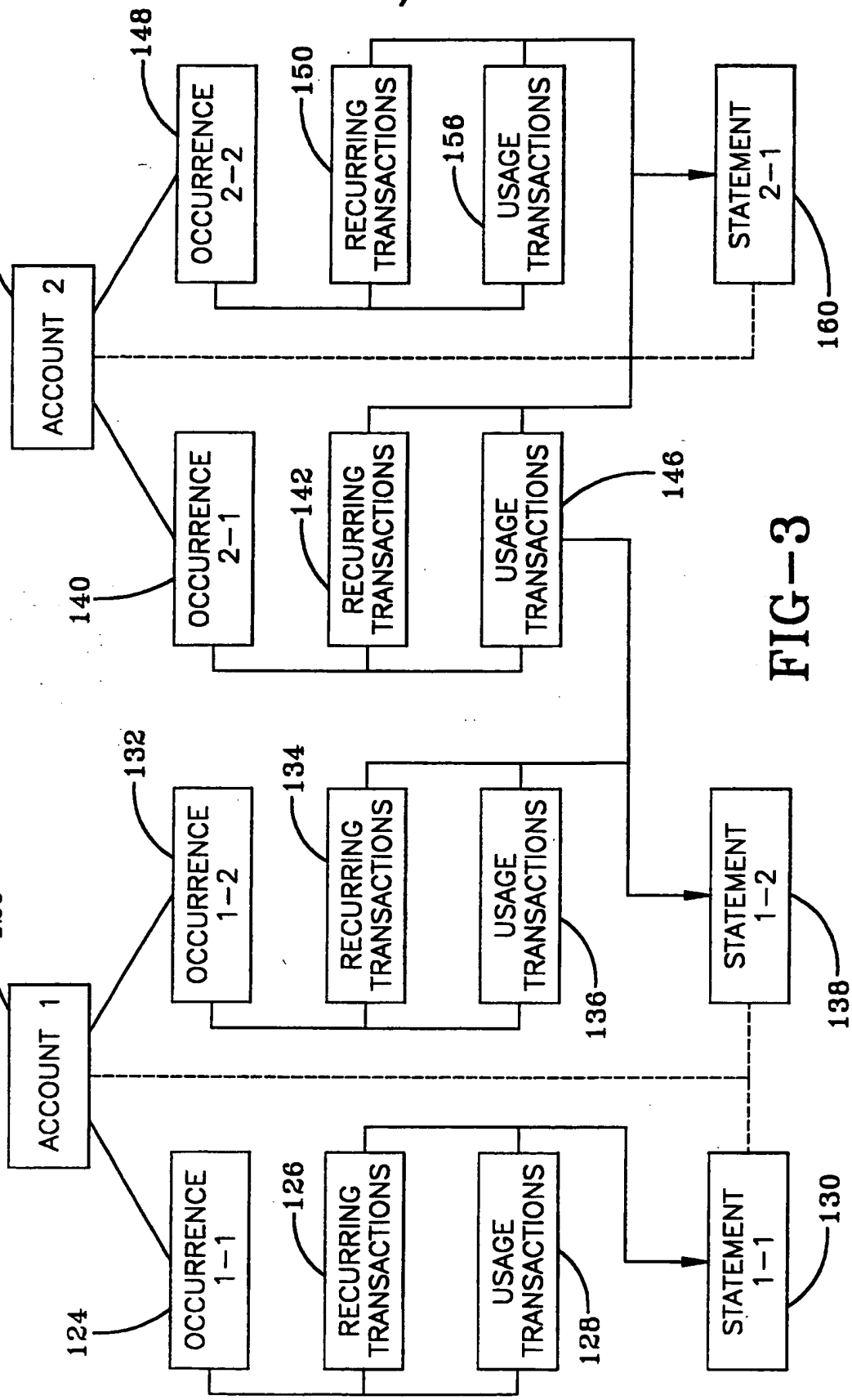
ACCOUNT 1
ACCOUNT 2
OCCURRENCE 1-1
OCCURRENCE 1-2
OCCURRENCE 2-1
OCCURRENCE 2-2
RECURRING TRANSACTIONS
USAGE TRANSACTIONS
STATEMENT 1-1
STATEMENT 1-2
STATEMENT 2-1
120
122
124
126
128
130
132
134
136
138
140
142
146
148
150
156
160

FIG-3

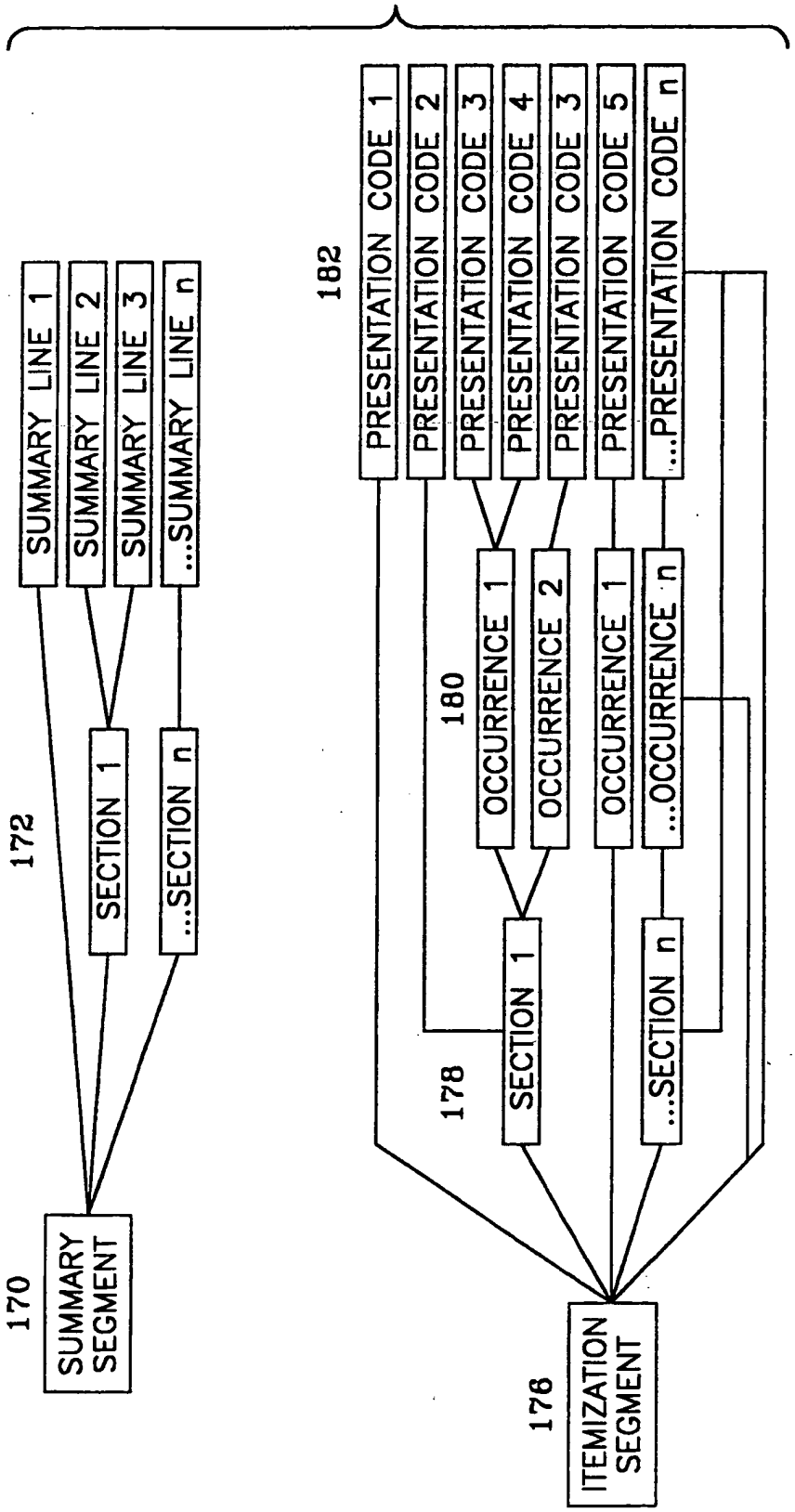
170
SUMMARY SEGMENT
172
SECTION 1
...SECTION n
174
SUMMARY LINE 1
SUMMARY LINE 2
SUMMARY LINE 3
...SUMMARY LINE n
176
ITEMIZATION SEGMENT
178
SECTION 1
...SECTION n
180
OCCURRENCE 1
OCCURRENCE 2
OCCURRENCE 1
...OCCURRENCE n
182
PRESENTATION CODE 1
PRESENTATION CODE 2
PRESENTATION CODE 3
PRESENTATION CODE 4
PRESENTATION CODE 3
PRESENTATION CODE 5
....PRESENTATION CODE n

FIG-4A

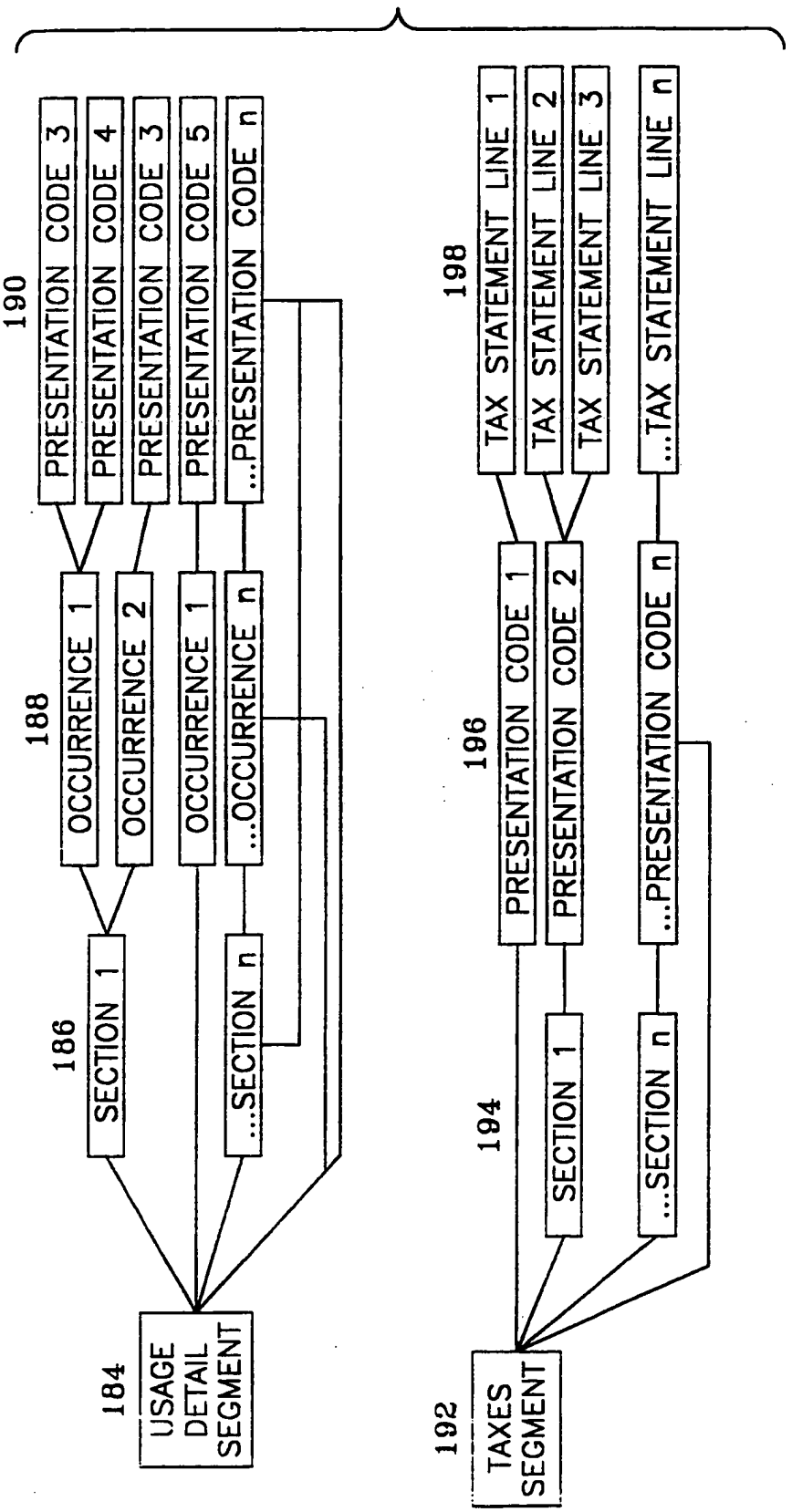
USAGE DETAIL SEGMENT
184
SECTION 1
SECTION n
186
OCCURRENCE 1
OCCURRENCE 2
OCCURRENCE 1
...OCCURRENCE n
188
PRESENTATION CODE 3
PRESENTATION CODE 4
PRESENTATION CODE 3
PRESENTATION CODE 5
...PRESENTATION CODE n
190
TAXES SEGMENT
192
SECTION 1
...SECTION n
194
PRESENTATION CODE 1
PRESENTATION CODE 2
...PRESENTATION CODE n
196
TAX STATEMENT LINE 1
TAX STATEMENT LINE 2
TAX STATEMENT LINE 3
...TAX STATEMENT LINE n
198

FIG-4B

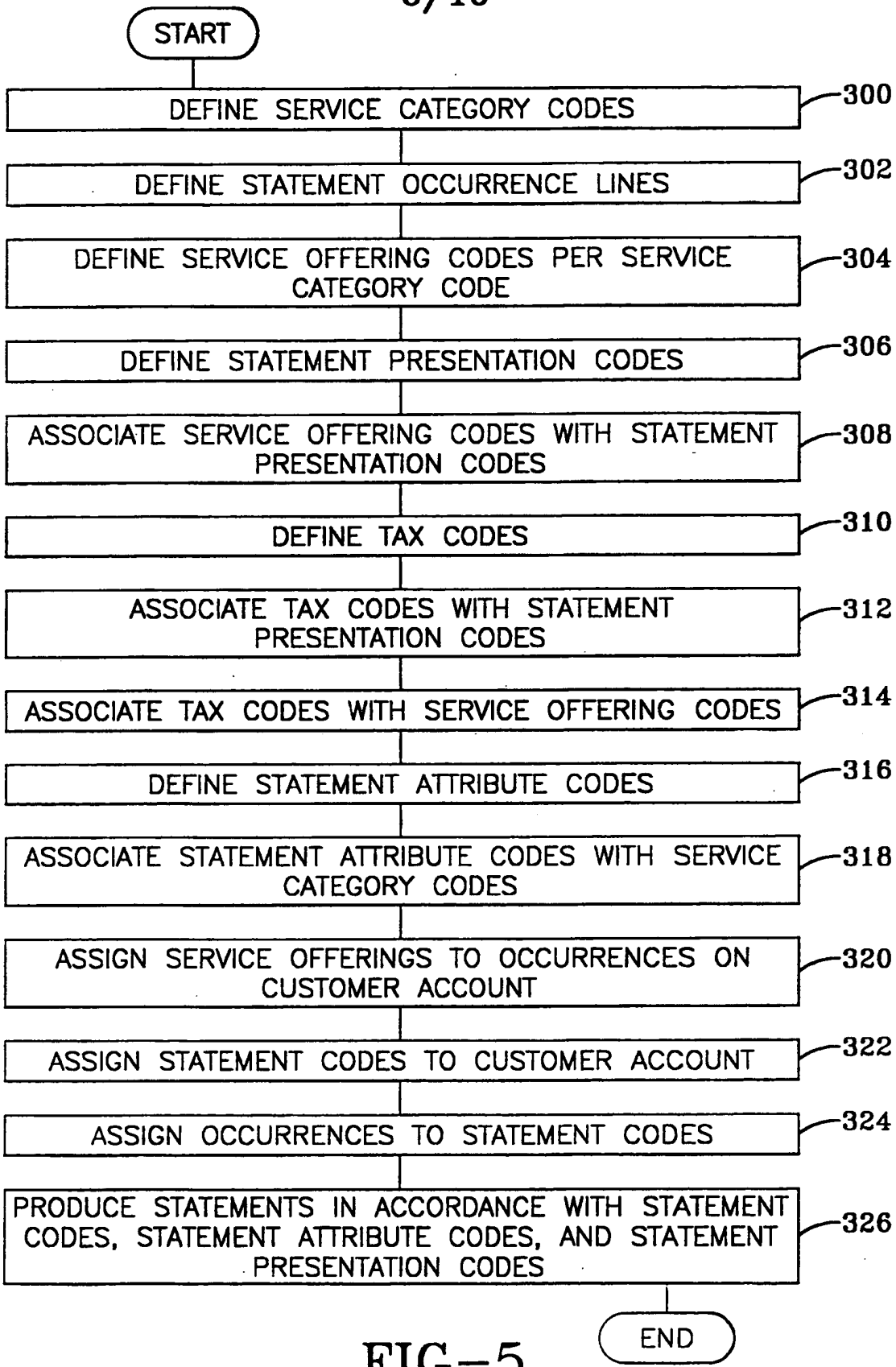
START
DEFINE SERVICE CATEGORY CODES
300
DEFINE STATEMENT OCCURRENCE LINES
302
DEFINE SERVICE OFFERING CODES PER SERVICE CATEGORY CODE
304
DEFINE STATEMENT PRESENTATION CODES
306
ASSOCIATE SERVICE OFFERING CODES WITH STATEMENT PRESENTATION CODES
308
DEFINE TAX CODES
310
ASSOCIATE TAX CODES WITH STATEMENT PRESENTATION CODES
312
ASSOCIATE TAX CODES WITH SERVICE OFFERING CODES
314
DEFINE STATEMENT ATTRIBUTE CODES
316
ASSOCIATE STATEMENT ATTRIBUTE CODES WITH SERVICE CATEGORY CODES
318
ASSIGN SERVICE OFFERINGS TO OCCURRENCES ON CUSTOMER ACCOUNT
320
ASSIGN STATEMENT CODES TO CUSTOMER ACCOUNT
322
ASSIGN OCCURRENCES TO STATEMENT CODES
324
PRODUCE STATEMENTS IN ACCORDANCE WITH STATEMENT CODES, STATEMENT ATTRIBUTE CODES, AND STATEMENT PRESENTATION CODES
326
END

FIG-5

Sunshine Cable
123 Main Street
Somewhere, State 12345

Billing Date: 7/25/99
Account Number: 1234567-01

Amount Due: $ 105.50
Due Date: 08/15/99

John Doe
321 Apple Avenue
Atlanta, Georgia 30040

Sunshine Cable
PO Box 4321
Somewhere, State 12345

12345 001001 123456701 1 1 0010550

Sunshine Cable
123 Main Street
Somewhere, State 12345

Account Name:
John Doe
Account Number:
1234567-01

Service Address:
321 Apple Avenue

Billing Date:
7/25/99

Payments received after 7/25/99 will appear on your next statement.

HBO

Customer Service:
1-800-123-4567

Trouble/Repair:
1-800-321-7654

PPV Ordering:
1-800-456-7890

Summary of Account Information[1]

Previous Balance[2]		75.00
Payments[2]		73.00-
Statement Adjustments[2]		3.00-
Telephone Charges[3]		
Monthly Recurring Services[2]	15.00	
Prorated Services[2]	4.00	
Usage[2]	12.00	
Other Charges & Credits[2]	2.00	
Total Telephone Charges[4]		33.00
Video & HSD Charges[3]		
Monthly Recurring Services[2]	60.00	
Prorated Services[2]	16.00-	
PPV[2]	8.00	
Other Charges & Credits[2]	3.00-	
Total Video/HSD Charges[4]		49.00
Taxes, Fees, & Surcharges[3]		
Taxes[2]	8.00	
Fees & Surcharges[2]	7.00	
Taxes, Fees, & Surcharges[4]		15.00
Total Balance Due[16]		96.00

FIG-6A

TO FIG-6B

FROM FIG-6A

8/10

Sunshine Cable
123 Main Street
Somewhere, State 12345

John Doe
321 Apple Avenue
1234567-01

Page 2

Itemization [1]

Previous Balance[14]				75.00
Payments & Adjustments[3]				
Payments[5]				
07/12/99[8]		Payment	50.00-	
07/20/99[8]		Payment	23.00-	
Subtotal[6]			73.00-	
Statement Adjustments[5]				
07/01/99[8]		Adjustment	17.00	
07/12/99[8]		Credit	20.00-	
Subtotal[6]			3.00-	
Total Payments & Adjustments[4]				76.00-
Telephone Service[3]				
Phone Line 123-4567[7]				
07/25/99-08/24/99[8]	Basic Monthly Service		10.00	
Features/Services[5]				
07/25/99-08/24/99[8]	900/976 Call Blocking		0.00	
07/25/99-08/24/99[8]	FCC Access Charge		3.50	
07/25/99-08/24/99[8]	Call Waiting		1.50	
Prorated Services[5]				
07/17/99-07/24/99[8]	Basic Monthly Service		2.70	
07/17/99-07/24/99[8]	FCC Access Charge		0.90	
07/17/99-07/24/99[8]	Call Waiting		0.40	
07/25/99-08/24/99[9]	Save-A-Lot Calling Plan		6.00	
06/21/99-07/22/99[9]	Long Distance		2.00	
04/13/99-07/05/99[9]	Calling Card		4.00	
Other Charges & Credits[5]				
07/17/99[8]	Line Hookup		24.00	
07/17/99[8]	Hookup Coupon		22.00-	
Total for 123-4567[10]			33.00	
Total Telephone Charges[4]				33.00

TO FIG-6C

FIG-6B

FROM FIG-6B

Sunshine Cable
123 Main Street
Somewhere, State 12345

John Doe
321 Apple Avenue
1234567-01

Itemization [1], continued

Video & Data Service [3]

Monthly Video Service [5]			
07/25/99-08/24/99 [8]	Limited Basic	13.00	
07/25/99-08/24/99 [8]	Expanded Service	13.00	
07/25/99-08/24/99 [8]	Digital Converter	3.00	
Subtotal [6]			29.00
07/25/99-08/24/99 [8]	Monthly Data Service	31.00	
Subtotal [6]			31.00
Prorated Services [5]			
06/15/99-06/24/99 [8]	HBO	3.50-	
06/25/99-07/24/99 [8]	HBO	10.00-	
07/15/99-07/24/99 [8]	Converter Rental	2.50-	
Subtotal [6]			16.00-
Pay Per View [5]			
07/12/99 [8]	Over Easy	4.00	
07/17/99 [8]	Sunny Side Up	4.00	
07/19/99 [8]	Scrambled Eggs	4.00	
07/20/99 [8]	Scrambled Eggs	4.00-	
Subtotal [6]			8.00
Other Charges & Credits [5]			
07/17/99 [8]	Debit	4.00	
07/17/99 [8]	Credit	7.00-	
Subtotal [6]			3.00-
Total Video & Data Charges [4]			49.00

TO FIG-6D

FIG-6C

FROM FIG-6C

Sunshine Cable
123 Main Street
Somewhere, State 12345

John Doe
321 Apple Avenue
1234567-01

Page 4

Usage Detail [1]

Phone Line 123-4567 [11]

Long Distance [5]

06/21/99 [12]	02:46P	Overthere City, NY	202-333-4444	DD/N	19	1.90
06/30/99 [12]	04:56P	Muckalucka, HI	555-444-6666	DD/N	32	3.20
07/22/99 [12]	8:26P	Underhill, GA	852-963-7411	DD/E	58	2.90
Subtotal [6]						8.00

Calling Card [5]

04/13/99 [12]	02:46P	Pleasantville, IA	246-135-7890	CC/D	9	2.25
Called from Los Angeles, CA			654-123-9870			
Transferred State/Local Tax						.25
07/05/99 [12]	04:56P	Muckalucka, HI	555-444-6666	CC/N	7	1.35
Called from Los Angeles, CA			654-123-9870			
Transferred State/Local Tax						.15
Subtotal [6]						4.00

Totals for 123-4567 [13] 12.00

Fees and Taxes [1]

Federal [15]	1.00	
State [15]	4.00	
Local [15]	3.00	
Total Taxes [4]		8.00
Fees & Surcharges [3]		
E-911 [15]	3.00	
UCC [15]	4.00	
Total Fees & Surcharges [4]		7.00
TOTAL BALANCE DUE [16]		96.00

It has been our sincere pleasure to serve your entertainment and information needs in 1999. We wish you a Happy Holiday season. We look forward to offering you our area's best value viewing package in the coming year. Please do not hesitate to give us a call if there is anything we can do to improve your viewing needs. We appreciate your business. [17]

FIG-6D

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/31089

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/60; H04M 11/00
US CL :705/34, 40; 379/91.01
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/34, 40; 379/91.01

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,963,925 A (KOLLING et al) 05 October 1999, see the entire document.	1-30

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 22 FEBRUARY 2001	Date of mailing of the international search report 09 MAR 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 308-5401	Authorized officer Peggy Harwood WALTER MALINOWSKI Telephone No. (703) 308-3172

Form PCT/ISA/210 (second sheet) (July 1998)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/31089

B. FIELDS SEARCHED
Electronic data bases consulted (Name of data base and where practicable terms used):

EAST
search terms: cellular, cable, mobile, video, pay per view, telephone, phone, format, template, arrangement, different, multiple, plural, second, bill, payment, charges, account